

*For Today's GLP/GMP Laboratories*

# The Autopol® III Automatic Polarimeter



 RUDOLPH  
RESEARCH  
ANALYTICAL

**TECHNICAL BULLETIN 919**

The Autopol III is Rudolph's entry level Dual Wavelength Pharmaceutical and Research grade polarimeter offering accuracy similar to Rudolph's more advanced models, but with a simplified interface. Just place your cell in the sample chamber, press the large red **Measure** Key and get 5 results in less than 25 seconds. It's that easy.



The Autopol III's thermo probe is covered with a micron thick glass coating to stand up to high molar Hydrochloric Acids used by some pharmaceutical labs.

A cGLP/GMP compliant printout, which includes the temperature of the sample is generated by pressing the **Print/Send** Key after the measurement is finished.

The Autopol III comes standard with one of the three different Accessory Packages shown below. Each Package includes a NIST Traceable Calibration Standard and Certificate, two Tungsten Halogen Lightsource lamps and an alignment target, but different cell configurations. You select the package that is right for your lab.

### ACCESSORY PACKAGE A

Accessory Package A includes one 100mm, 6ml glass center fill cell and one 100mm, 6ml glass center fill stainless steel jacketed cell. This is our most popular package, as cell windows can be removed and cleaned to avoid sample residue build up. All cells in this package are compatible with acids.

Heading Instrument Identifier

Rudolph Research Analytical

This sample was measured on an Autopol III, serial number 99999, manufactured by Rudolph Research Analytical, Hackettstown, NJ.

Sample Name: Sucrose

Lot ID: 54321

Probe Temperature: 25.0

No	Sample ID	Measurement	WLG	CellLg	Conc	Temp	Time	Date
1	1234	34.561 SR	589	100	100.000	25.1	07:59:20 AM	Jan 30, 2005
2	1234	34.561 SR	589	100	100.000	25.0	07:59:37 AM	Jan 30, 2005
3	1234	34.558 SR	589	100	100.000	25.0	07:59:40 AM	Jan 30, 2005

Counts: 3  
Average: 34.561  
Std. Dev: 0.0001  
Maximum: 34.561  
Minimum: 34.558

Statistics    Displayed Measurement & Measurement Type    Wavelength    User Input Sample Cell Length    User Input Solution Concentration    Sample Temperature Measured by Built-in Temperature Probe

### ACCESSORY PACKAGE B

Accessory Package B includes one 50mm glass jacketed fixed end cell and one 100mm glass center fill cell with removable windows. Fused end cells avoid improper assembly by untrained users, but are very fragile and difficult to clean. All cells in this package are compatible with acids.

### ACCESSORY PACKAGE C

Accessory Package C is designed for small volume and durability and is very popular with universities. Each cell has a lifetime warranty against breakage, is easily filled and cell windows can be removed, cleaned and replaced if necessary. Cells are available in 50mm, 100mm and 200mm length versions. Cell volumes range from 0.5ml to 15ml.



Package A



Package B



Package C

### SPECIFICATIONS:

<b>Measuring Mode:</b>	Optical Rotation, Specific Rotation, Concentration, °Z (ISS) Sugar Degrees
<b>Measuring Scale:</b>	Degrees Arc Optical Rotation
<b>Measuring Range:</b>	±89° Arc Optical Rotation
<b>Resolution:</b>	0.001° Arc Optical Rotation
<b>Reproducibility:</b>	0.002° Arc Optical Rotation
<b>Accuracy:</b>	0.002° Arc up to 1°, 0.2% above 1°
<b>Prism:</b>	Glan Thompson Calcite Quartz
<b>Optical Wavelengths:</b>	589nm, 546nm
<b>Temp. Control Range:</b>	Available on Autopol V only. Temperature control by circulating water bath
<b>Temp. Probe Measurement Range:</b>	10° - 40°C
<b>Temp. Probe Measurement Accuracy:</b>	±0.1°C
<b>Measurement Time:</b>	5 measurements in less than 25 seconds (avg.)
<b>Light Source:</b>	Tungsten-halogen 6V, 20W, avg. 2,000 hour life
<b>Sample Chamber:</b>	Accepts sample tubes up to 200mm
<b>Data Storage:</b>	Available on Autopol V only.
<b>Communication Interface:</b>	Two RS232 serial ports, one parallel printer port
<b>Analog Output:</b>	0.1% resolution 0-10 volt full range (optional)
<b>Calibration:</b>	Automatic calibration via touchscreen
<b>Display:</b>	7.5cm x 10cm Graphics LCD, 320 x 240 dots cold fluorescent back lit
<b>User Interface:</b>	Touchscreen
<b>Automatic Sensitivity Control:</b>	Measures samples with transmittance as low as 0.01% (up to O.D. 4.0)
<b>Input Power:</b>	100 - 240 V, 50/60 Hz
<b>Operating Dimensions:</b>	24.3"W x 12.7"H x 17.5"D 617mm W x 323mm H x 445mm D
<b>Shipping Dimensions:</b>	36"W x 19"H x 21"D 923mm W x 487mm H x 538 mm D
<b>Operating Weight:</b>	42 lbs. (19.05 kg)
<b>Shipping Weight:</b>	72 lbs. (32.6 kg)
<b>Calendar/Clock Functions:</b>	Battery-backed clock; time and date sent to computer & printer